

Having always found in the South American guano more distinct traces of lithate of ammonia than in the African, he inquires whether the difference may not be owing to different states of atmosphere in the two regions;—in the one, the clouded state of the air impeding the sun's rays; in the other, the usually unclouded state interposing no obstacle to their full effect. He inquires too, whether the circumstance of the comparatively rapid conversion of lithic acid into the oxalic under the influence of light, as witnessed in the experiment detailed, may not account for even recently formed guano being destitute of lithate of ammonia; and he mentions an example in point, namely, a specimen he had received from the island of Ichabor being found with a large quantity of oxalate of ammonia, to contain no lithate of ammonia,—a specimen described as “having been scraped off a rock, where it was in a thin layer, and much exposed to the sun.”

2. “An Account of the Newtonian Dial presented to the Royal Society, in a letter to the President.” By the Rev. Charles Turnor, F.R.S.

The dial here described was taken down in the early part of the present year from the south wall of the Manor-house of Wools-thorpe, a hamlet to Colsterworth in the county of Lincoln, the birth-place of Newton. It was marked on a large stone at the angle of the building, and about six feet from the ground. The name of NEWTON, with the exception of the first two letters, which have been obliterated, are inscribed under the dial in wide and capital letters. The gnomon has disappeared many years ago.

3. “On the Non-coincidence of the Focus of the Photogenic Rays with that of the Visual Rays of the Solar Spectrum.” By M. A. Claudet. Communicated by S. Hunter Christie, Esq., Sec. R.S., &c.

After detailing the difficulties he had met with in obtaining perfect pictures when a lens, accurately corrected for spherical and chromatic aberration, was employed in the Daguerreotype process, the author states that in order to obtain a clear and well-defined image of any object on the Daguerreotype plate, he generally found it necessary to adjust the focus on the ground glass by another object brought considerably nearer to the camera than the object whose picture was required. When this adjustment is made, he proceeds to apply the principle practically to the taking of portraits. He finds that in achromatic object-glasses the focus of photogenic action is not coincident with the visual focus; and the distance between these two foci varies according to the nature of the combination of the glasses, to their different dispersive powers, and to the degree of intensity of the light. By attention to these circumstances in accurately adjusting the Daguerreotype plate to the situation of the focus of the photogenic rays, the author has succeeded in obtaining the most perfect delineations of objects.

4. “Observations on some of the Nebulæ.” By the Earl of Rosse, F.R.S.

The nebulae, of which an account is given in this paper, were observed with the speculum of three feet aperture described in the Philosophical Transactions for 1840: and the object of the observations was rather to test its powers and to decide the merits of progressive experiments than to seek for astronomical results. Sketches are given of the actual appearance of five of the nebulae observed, namely those numbered 88, 81, 26, 29 and 47 in Sir John Herschel's catalogue. The author observes, in conclusion, that all that he has seen confirms the accuracy of Sir John Herschel's judgment in selecting the nebulae which he places in the class designated as resolvable; and that every increase of instrumental power still continues to add to the number of the clusters at the expense of the nebulae, properly so called. It would still, however, be unsafe, he further remarks, to conclude, that such will always be the case, and thence to draw the obvious inference that all nebosity is but the glare of stars too remote to be separated by the utmost power of our instruments.

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June 20, 1844.

JAMES WALKER, Esq., V.P., in the Chair.

1. "On the Structure of the Ultimate Fibril of the Muscle of Animal Life." By Erasmus Wilson, Esq., Lecturer on Anatomy and Physiology in the Middlesex Hospital; in a Letter addressed to Peter Mark Roget, M.D., Sec. R.S. Communicated by Dr. Roget.

By resorting to peculiar methods of manipulation, and employing a microscope of more than ordinary power, the author, with the assistance of Mr. Lealand, has succeeded in discovering the real structure of the ultimate muscular fibril, in a specimen taken from the arm of a strong healthy man immediately after its amputation. He finds each fibril to be composed of minute cells, disposed in a linear series, flattened at their surfaces of apposition, and so compressed in the longitudinal direction as to leave no marginal indentation on the surface; thus constituting a uniform cylinder, divided into minute subdivisions by transverse septa, which are formed by the adherent surfaces of contiguous cells. The diameter of the fibril, in the state of relaxation, is the 20,000th part of an inch. The cells are filled with a transparent substance, to which the author gives the name of *Myoline*, and which differs in its refractive density in different cells. In four consecutive cells the myoline is of greater density than in the four succeeding cells, and this alternation is repeated throughout the whole course of the fibril. In consequence of all the fibrils composing the ultimate fasciculus having the same structure, and the cells, which are in lateral juxtaposition, containing myoline of the same density, they act similarly on light, and the whole presents, to the eye of the microscopic observer, a succession of striæ or bands, dark and luminous alternately, and transverse to the direction of the fasciculus; an appearance